212

Boeing Realty Corporation
3760 Kilroy Airport Way, Suite 500
Long Beach, CA 90806
Telephone: 562-627-4900
FAX: 562-627-4906

24 July 2001
C6-BRC-T-01-014

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
Los Angeles Region
320 W. 4th Street, Suite 200
Los Angeles, CA 90013

BOEING

Attention: John Geroch

Subject: **REPORT OF DESTRUCTION OF WELL BL-2 FOR BOEING REALTY CORPORATION, FORMER C-6 FACILITY, 19503 SOUTH NORMANDIE AVENUE, LOS ANGELES, CA**

Dear Mr. Geroch:

Please find enclosed for your file, a copy of the subject document prepared by Kennedy/Jenks Consultants for Boeing Realty Corporation.

If you have any questions concerning this document, please contact the undersigned at 562-593-8623.

Sincerely,

Stephanie Sibbett
Boeing Realty Corporation

Cc: Mario Stavale, Boeing Realty Corporation
Steve Call, CEG Construction

enclosure

Kennedy/Jenks Consultants

Engineers & Scientists

2151 Michelson Drive
Suite 100
Irvine, California 92612-1311
949-261-1577
FAX 949-261-2134

20 July 2001

Mr. Mario Stavale
Boeing Realty Corporation
3760 Kilroy Airport Way
Suite 500
Long Beach, CA 90806

Subject: Report of Destruction of Well BL-2
Boeing Realty Corporation Former C-6 Facility
Los Angeles, California
K/J 004032.02

Dear Mr. Stavale:

Kennedy/Jenks Consultants (Kennedy/Jenks) provides this report documenting the destruction of monitoring well BL-2 at Boeing Realty Corporation's Former C-6 Facility in Los Angeles, California (Site). BL-2 was installed on 3 February 1999 by Arcadis Geraghty & Miller in connection with groundwater characterization of the former International Light Metals (ILM) property immediately west of the Site. The redevelopment of a portion of the Site known as Parcel B required that well BL-2 be destroyed. Construction plans show that the former well is to be located under the centerline of a foundation footing.

Groundwater monitoring well BL-2 was located along the western boundary of the Site (Figure 1), about 50 ft east of the property boundary and 1,600 ft south of 190th Street. Well BL-2 was constructed of 2-inch Schedule-40 PVC casing, was 81.5 ft deep, and had a screened interval from 61.5 to 81.5 ft below ground surface (bgs). The lead environmental agency for activities at the former ILM facility is the California Department of Toxic Substances Control (DTSC).

SCOPE OF WORK

The well was destroyed in two phases starting on 2 May 2001. The initial phase included groundwater gauging and sampling of BL-2 followed by well destruction. Kennedy/Jenks performed groundwater gauging and sampling, while West Hazmat Drilling Company (West Hazmat), a C-57 licensed drilling contractor, performed the well destruction using a mobile drilling rig. During the initial destruction activity a tremie pipe was not used to place the grout, therefore it was decided to redrill and regrout the well. This second phase was performed using West Hazmat on 8 June 2001.

The following sections summarize the activities for both the initial and second phase of destruction.

INITIAL WELL DESTRUCTION

Initial well destruction activities were performed on 2 May 2001 under a permit issued by the Los Angeles County Department of Health Services (DHS), a copy of which is included as Attachment A.

Task 1 – Groundwater Monitoring

Immediately prior to well destruction on 2 May 2001, Kennedy/Jenks gauged BL-2. Wells BL-1 and BL-3, located within 950 ft of BL-2, were gauged on 31 May 2001. The water levels were gauged against the top of the well casing (measuring point) to the nearest 0.01 ft using an electronic water level meter. The top of the casing at BL-3 had been previously damaged; therefore, an accurate water level elevation measurement was not possible. The following water levels were recorded.

Table 1.
Water Level Data

Well No.	Top of Casing Elevation (ft MSL)	Depth to Water (ft below top of casing)	Groundwater Elevation (ft MSL)
BL-1	58.34	71.02	-12.68
BL-2	58.15	71.76	-13.61
BL-3	NA	71.10	NA

NA – Not available. The well casing had been damaged at the time of measurement.

On 2 May 2001, Monitoring Well BL-2 was purged using an electric submersible pump. Purged water was monitored in the field for pH, electrical conductivity, and temperature. These parameters were stable after purging approximately six gallons of water, and a total of 10 gallons of water was purged. A field sampling form documenting the purging and sampling activities is included in Attachment B.

Upon completion of purging, a water sample was collected using a disposable bailer with a bottom-emptying device. A portion of the sample was transferred into three 40-ml VOA bottles for analysis of volatile organic compounds (VOCs), including trichloroethene (TCE), by EPA Method 8260. Another portion of the sample was transferred into a 500-ml polyethylene bottle for analysis of chromium by EPA Method 7199. The results of the analytical testing are summarized in the following table. Method 8260 analytes not included in Table 2 were not detected in the analysis.

Table 2.
Analytical Results for BL-2

Analyte	Result in Monitoring Well BL-2 (µg/l)
Trichloroethene	1,100
Chloroform	5.1 J
Hexavalent Chromium	16

J – Result is less than the reporting limit.

The analytical test results and chain-of-custody documentation for the water sample collected on 2 May 2001 are included in Attachment C.

Task 2 – Overdrill and Grout

Well BL-2 was destroyed by overdrilling the PVC casing with an $8^3/_8$-inch OD auger to a total depth of about 84 ft bgs. The well casing and screen were ground up by the advance of the bit and recovered from the hole with the soil and annulus materials. The materials recovered during drilling were transferred into two 55-gallon drums for temporary onsite storage pending offsite disposal.

Following overdrilling, the borehole was grouted with a mixture of 3 to 3.5 bags of Portland cement per 30 gallons of water; a total grout volume of approximately 200 gallons. As required by the DTSC, no bentonite was used in the mix. This mix was placed into the overdrilled borehole by knocking out the wooden plug/stinger and pouring mix down the inside of the hollow-stem auger until the mix reached the ground surface in the auger. Hollow stem augers were then pulled from the hole in 20 ft increments, allowing the grout to flow into the open hole. After each increment of auger was removed, additional cement was added to bring the level of the mix to surface.

SECOND PHASE WELL DESTRUCTION

Between the initial and second phase of destruction, building construction activities at BL-2 required that a portion of the cement plug be removed, and the top of the plug had been lowered to 8 ft bgs. In order to proceed with the second phase:

- A backhoe was used to expose the plug,
- An 18-inch OD (12-inch ID) auger was placed over the exposed plug to an approximate depth of 10 ft to act as a conductor casing. The excavation was then backfilled around the casing to provide the stability required to advance smaller augers within the casing.

Drilling proceeded as follows:

- A 10-inch OD (6.25-inch ID) auger equipped with a steel-plate-covered wood plug was used to advance the borehole to a depth of 35 ft bgs. In this interval, the cuttings were approximately 40 percent grout (light gray concrete chips) and 60 percent soil. At a depth of 35 ft bgs coinciding with a change in soil type from relatively fine-grained sediment to coarser-grained materials, an apparent decline in the percentage of grout in the drill cuttings was noted. This suggested that either there was a void space in the original placement of the plug or the drill bit might have moved laterally off of the cement plug.
- The 10-inch OD auger was temporarily withdrawn and the modified wooden plug removed.
- The 18-inch OD auger was advanced to a depth of 50 ft bgs to recapture the plug and act as a guide to minimize the tendency for lateral movement of the smaller auger that was to be advanced through the silty sand encountered below 35 ft. In the interval between 35 to 50 ft bgs, the cuttings were approximately 25 percent grout and 75 percent soil. This lower percentage was expected given the larger diameter hole.
- The 10-inch OD auger equipped with a retrievable center bit was advanced through the 18-inch OD auger to a depth of 85 ft bgs. In the interval between 50 and 80 ft bgs, cuttings were not observed at the surface as they accumulated on the auger flights and

worked their way to the surface. The first cuttings were observed at the surface as the borehole was advanced from 80 ft to the total depth of 85 ft bgs.

- The retrievable center bit was removed from the 10-inch OD auger, and the auger was filled with the cement mixture using the tremie and grout procedures described in the section below.

- Upon withdrawal, a five-foot auger flight was removed before the 10-inch OD auger became sand locked. The 18-inch OD auger was removed as part of the effort to recover the 10-inch auger.

- During attempts to free the 10-inch OD auger, it sheared off and the column of grout moved into the hole as the remaining auger was withdrawn. As a result, 35 linear ft of 10-inch OD auger was left in the hole from about 45 to 80 ft bgs.

Mixing and Grouting

The cement mix used to fill the drill hole was mixed in a ratio of 4 bags of Portland cement to 30 gallons of water. The mixing and placement process was carefully monitored and recorded by Kennedy/Jenks. During grout placement, the 1.5-inch diameter tremie pipe was placed at the bottom of the 10-inch OD auger (i.e., 85 ft bgs) and grout was placed under pressure in 20-ft lifts until the 10-inch OD auger was full to the surface.

After the 10-inch OD auger sheared off and was withdrawn, the cement grout in the upper 45 ft of the 10-inch OD augers drained into the hole. The 18-inch OD auger had been removed earlier, as described above. The cement mix was then tremied into the upper 45 to 50 ft of the 18-inch hole to within 1 foot of the surface. The borehole remained open without collapsing or caving during grouting. Grouting observations for the second phase of BL-2 well destruction are summarized in Table 3, and a schematic of the completed destruction configuration is shown in Figure 2.

Table 3.
Destruction Observations for BL-2 – Second Phase

Overdrilling Observations	BL-2 Redrill	Comment
Total Depth Drilled (ft)	85	
Depth that cuttings were first observed at top of conductor casing	13.5 ft	
Length (ft) of 10-inch OD hole / Depth interval (ft bgs) of 10-inch OD hole	35 / 45-80	This 35-ft interval contains 30 ft of 10-inch diameter auger that sheared off in the lower portion of the hole.
Volume of 10-inch OD hole below 50 ft (gal.)	143	Calculated volume of 10-inch diameter hole. Actual volume is less because remaining auger flights occupy a portion of the hole.
Length (ft) of 18-inch OD hole / Depth interval (ft bgs) of 18-inch OD hole	50 / 0-50	This 50-ft interval contains 5 ft of 10-inch diameter auger that sheared off in the lower portion of the hole.
Volume of 18-inch OD hole (gal.)	661	
Total maximum volume of hole (gal.)	804	Assumes the theoretical maximum of an open borehole below 50 ft bgs. Actual volume is less due to presence of auger.
BACKFILL OBSERVATIONS		
Backfill mixture totals, Portland (bags) / Water (gal.)	76 / 570	
Total volume of Portland/water mix used (gal.)	912 - 950	A total of 19 batches were mix at about 48 to 50 gallons each

Table 3.
Destruction Observations for BL-2 – Second Phase

Overdrilling Observations	BL-2 Redrill	Comment
Thickness of soil cover (ft)	8	Compacted to 95%, placement and compaction was monitored and approved by Norcal.

Final Completion

Upon inspection of the former BL-2 location on 11 June 2001, it was observed that the cement level had receded to 4.4 ft bgs. For site construction purposes an excavator was used to:

- re-excavate the soil that had been temporarily placed around the 18-inch OD casing,
- remove the cement plug to a depth of 8 ft bgs, and
- place and compact soil in the excavation.

Norcal provided compaction testing and approval. A compaction report from Norcal is included in Attachment D.

Destruction Derived Waste (Initial and Second Phase)

The two drums of destruction residuals from the initial destruction phase were temporarily stored at the Site pending disposal by Boeing Realty Corporation. Kennedy/Jenks has been informed by Boeing that these drums were disposed of as nonhazardous at the Phillips Environmental facility in Inglewood, California.

Eleven drums of destruction residuals from the second phase of destruction were temporarily stored at the Site pending disposal by Boeing Realty Corporation. Kennedy/Jenks has been informed by Boeing that these drums will be disposed of as nonhazardous at the Chem Waste Management facility near Kettleman City, California.

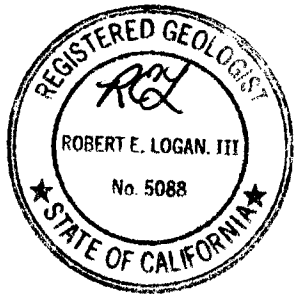
Kennedy/Jenks appreciates the opportunity to provide this service to Boeing Realty Corporation. Please call me if you have any questions.

Very truly yours,

KENNEDY/JENKS CONSULTANTS

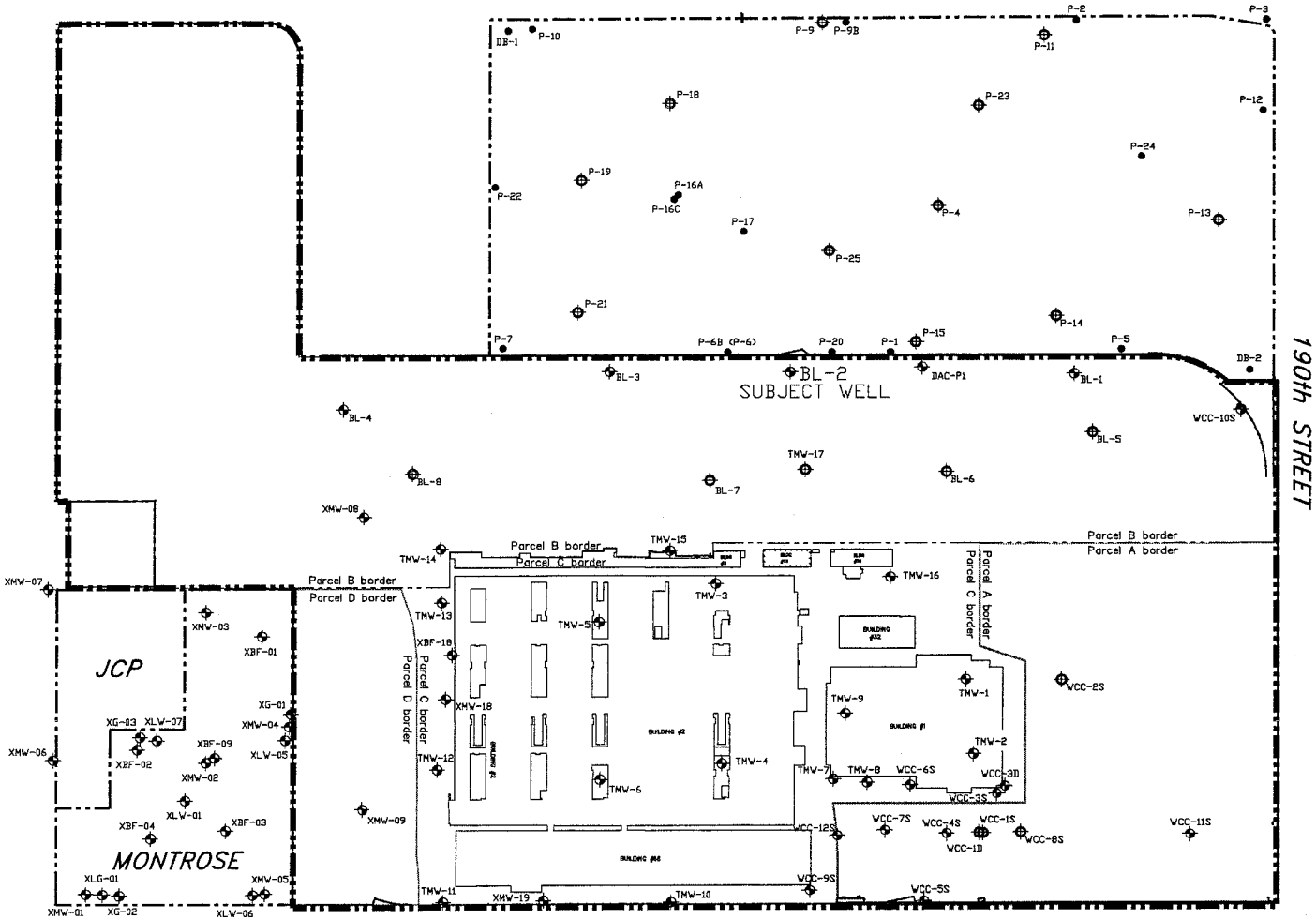
Robert C Logan

Robert E. Logan, R.G.
Senior Geologist



Attachments:
Figure 1 – Well Location Map
Figure 2 - Completed Destruction Configuration
Attachment A – Permit for Destruction of Monitoring Well BL-2
Attachment B – Field Sampling Form BL-2 Groundwater Monitoring
Attachment C – Analytical Test Results and Chain-of-Custody Documentation
Attachment D – Norcal Compaction Report

cc: Ron Giraudi, TRC Solutions, Inc.
Stephanie Sibbett, Boeing Realty Corporation



Approximate Scale 1"=600'

Kennedy/Jenks Consultants

Boeing Realty Corporation
Former C-6 Facilty

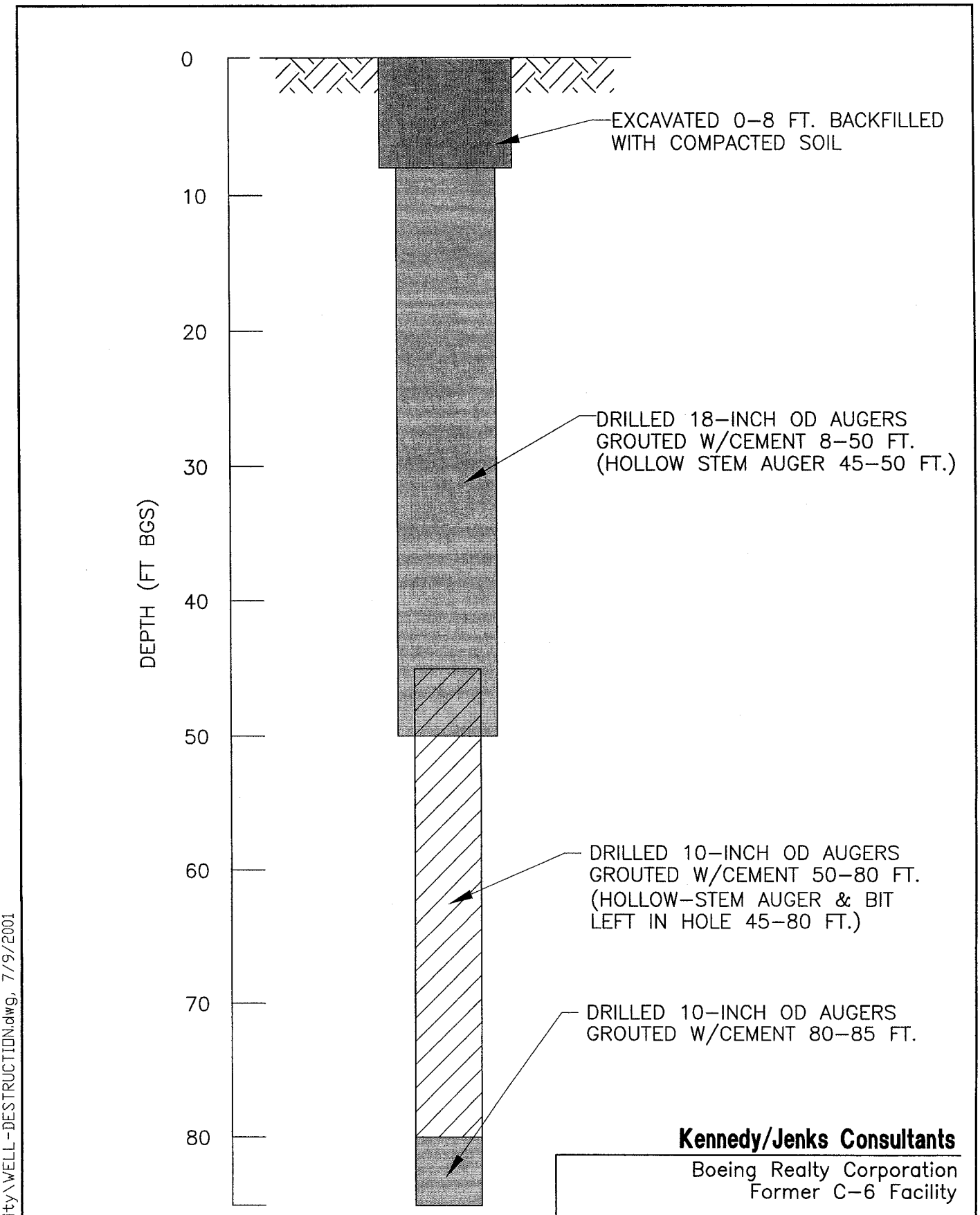
Former Location of BL-2

July 2001
K/J 004032.01

Figure 1

K:\Boeing\MDRC C-6\Boeing BL-2 Location.dwg, 7/9/2001

BOE-C6-0232962



K:\Boeing\C6 Facility\WELL-DESTRUCTION.dwg, 7/9/2001

Kennedy/Jenks Consultants

Boeing Realty Corporation
Former C–6 Facility

Schematic of BL–2 Well Destruction

July 2001
K/J 004032.01

Figure 2

ATTACHMENT A
PERMIT FOR DESTRUCTION OF MONITORING WELL BL-2

ENVIRONMENTAL HEALTH 2525 Corporate Place Monterey Park, Ca 91754
COUNTY OF LOS ANGELES DEPARTMENT OF HEALTH SERVICES

DATE 04-26-01

DESCRIPTION

TYPE OF PERMIT (CHECK)

- ☐ NEW WELL CONSTRUCTION
- ☐ RECONSTRUCTION OR RENOVATION
- ☒ DESTRUCTION

TYPE OF WELL

- ☐ PRIVATE DOMESTIC
- ☐ PUBLIC DOMESTIC
- ☐ IRRIGATION
- ☒ OBSERVATION/MONITORING
- ☐ CATHODIC
- ☐ INDUSTRIAL
- ☐ GRAVEL PACK
- ☐ TEST

TYPE OF CASING
2" PVC. Sch 40

METHOD OF SEALING OF CASING

METHOD OF DESTRUCTION
Drill out to total Depth & tremie grout (~~Bentonite~~ B.C. Cement) from the Bottom to Grade followed by a concrete cap

LOCATION

ADDRESS (NUMBER, STREET, AND NEAREST INTERSECTION)
19503 South Normandie Aye.

CITY
Los Angeles

DIAGRAM (SHOW PROPERTY LINES, STREET, ADDRESS, WELL SITE, SEWERS, AND PRIVATE SEWAGE DISPOSAL SYSTEMS ALONG WITH LABELS AND DIMENSIONS)

See Atached

RECEIVED
MAY 22

APPLICANT

NAME OF WELL DRILLER (PRINT)
West Hazmat Drilling Inc.

TRADE NAME

BUSINESS ADDRESS
1016 E Kotella Aye Anaheim CA 92805

CITY

NAME OF WELL OWNER (PRINT)
Boeing Realty Corporation

MAILING ADDRESS
3760 Kilroy Airport Way Suite 50

CITY
Long Beach CA 90806

I hereby agree to comply in every respect with all regulations of the County Preventive/Public Health Services and with all ordinances and laws of the County of Los Angeles and of the State of California pertaining to well construction, reconstruction and destruction. Upon completion of well and within ten days thereafter, I will furnish the County Preventive/Public Health Services with a complete log of the well, giving date drilled, depth of well, all perforations in casing, and any other data deemed necessary by such County Preventive/Public Health Services.

Bob Mc W.H.D.C.
Applicant's Signature

DISPOSITION OF APPLICATION: (For Sanitarians Use Only)

- ☑ APPROVED
- ☐ DENIED
- ☐ APPROVED WITH CONDITIONS

If denied or approved with conditions, report reason or condition here:

DATE

SANITARIAN

DATE 5/2/01

SECTION CHIEF Ed Bruggy

ENTERED

When signed by Section Chief, this application is a permit.

APPLICANT COPY

76A688
H-13 (Rev. 3/91) 5/96

BOE-C6-0232965

ATTACHMENT B
FIELD SAMPLING FORM BL-2 GROUNDWATER MONITORING

Groundwater Purge and Sample Form Date: 5-2-01 **Kennedy/Jenks Consultants**

PROJECT NAME: Boeing Parcel B
WELL NUMBER: BL-2
PROJECT NUMBER: 004034.00
PERSONNEL: Shane Scrimshire
STATIC WATER LEVEL (FT): 71.76
MEASURING POINT DESCRIPTION: Top of casing
WATER LEVEL MEASUREMENT METHOD: Electric Sounder
PURGE METHOD: Redi-Flow 2
TIME START PURGE: 0710
PURGE DEPTH (FT) 80'
TIME END PURGE: 0722
TIME SAMPLED: 0730
COMMENTS: Sample# BL-2-050201

WELL VOLUME CALCULATION (FILL IN BEFORE PURGING)	TOTAL DEPTH (FT)	-	DEPTH TO WATER (FT)	=	WATER COLUMN (FT)	X	MULTIPLIER FOR CASING DIAMETER (IN) 2	4	6	=	3 gal. 6 gal. CASING VOLUME (GAL)
	83.60		71.76		11.84		0.16	0.64	1.44		1.89

TIME	0716	0719	0722				
VOLUME PURGED (GAL)	3 gal.	6 gal.	8 gal				
PURGE RATE (GPM)							
TEMPERATURE (°C)	70.6	71.9	72.5				
pH	7.06	7.14	7.11				
SPECIFIC CONDUCTIVITY (micromhos/cm) (uncorrected)	2,510.	2,560.	2,510.				
DISSOLVED OXYGEN (mg/L)	/	/	/				
eH(MV)Pt-AgCl ref.	/	/	/				
TURBIDITY/COLOR	light tan	V.O. light yellow	clear				
ODOR	No	No	No				
DEPTH OF PURGE INTAKE (FT)	80'	80'	80'				
DEPTH TO WATER DURING PURGE (FT)	/	/	/				
NUMBER OF CASING VOLUMES REMOVED	/	/	/				
DEWATERED?	/	/	/				

F-43.1 (5-89)

Groundwater Purge and Sample Form Date: 5-2-01 **Kennedy/Jenks Consultants**

PROJECT NAME: Boeing WELL NUMBER: BL-2

PROJECT NUMBER: 004034.00 PERSONNEL: Shane Scrimshire

SAMPLE DATA:

TIME SAMPLED: 0730 COMMENTS:

DEPTH SAMPLED (FT): 80'

SAMPLING EQUIPMENT: Bail - Flow 2

SAMPLE NO.	NO. OF CONTAIN-ERS	CON-TAINER TYPE	PRESER-VATIVE	FIELD FILTRA-TION	VOLUME FILLED (ml or L)	TURBIDITY	COLOR	SHIPPED UNDER CHAIN-OF-CUS-TODY AT 4°C?	ANALYSIS REQUEST (METHOD)	COMMENTS
BL-2-050201	4	VOA ↓ 500mL plastic	HCl ↓ None	No	120 mL ↓ 500 mL	—	Clear	Yes	8260 ↓ 7199	

PURGE WATER DISPOSAL NOTES:

TOTAL DISCHARGE (GAL): 8 gal. COMMENTS:

DISPOSAL METHOD: Drum Storage

DRUM DESIGNATION(S)/VOLUME PER (GAL): 1 drum

WELL HEAD CONDITIONS CHECKLIST (CIRCLE YES OR NO - IF NO, ADD COMMENTS):

WELL SECURITY DEVICES OK (BOLLARDS, CHRISTY LID, CASING LID AND LOCK)?: YES (NO)

INSIDE OF WELL HEAD AND OUTER CASING DRY?: (YES) NO

WELL CASING OK?: (YES) NO

COMMENTS: No protection around exposed well casing, approx 1.5' above grade.

GENERAL:

WEATHER CONDITIONS: Clear

TEMPERATURE (SPECIFY °C OR °F): 60°F

PROBLEMS ENCOUNTERED DURING PURGING OR SAMPLING? No

cc: Project Manager: Bob Logan
Job File:
Other:

F-43.2 (5-89)

ATTACHMENT C
ANALYTICAL TEST RESULTS AND CHAIN-OF-CUSTODY DOCUMENTATION

EXECUTIVE SUMMARY - Detection Highlights

K1E020280

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
EL_2_050201_ 05/02/01 07:30 014				
Chloroform	5.1 J	12	ug/L	SW846 8260B
Trichloroethene	1100	12	ug/L	SW846 8260B

KENNEDY/JENKS CONSULTANTS

Client Sample ID: BL_2_050201_

GC/MS Volatiles

Lot-Sample #...: E1E020280-014 **Work Order #...:** ECPPG1AA **Matrix.....:** WATER
Date Sampled...: 05/02/01 07:30 **Date Received..:** 05/02/01 15:35 **MS Run #.....:** 1124160
Prep Date.....: 05/04/01 **Analysis Date..:** 05/04/01
Prep Batch #...: 1124415 **Analysis Time..:** 07:07
Dilution Factor: 12.5
Analyst ID.....: 015590 **Instrument ID..:** MSH
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Acetone	ND	120	ug/L	38
Benzene	ND	12	ug/L	3.8
Bromobenzene	ND	12	ug/L	3.8
Bromochloromethane	ND	12	ug/L	3.8
Bromoform	ND	12	ug/L	3.8
Bromomethane	ND	25	ug/L	12
Carbon tetrachloride	ND	6.2	ug/L	3.8
2-Butanone	ND	62	ug/L	38
n-Butylbenzene	ND	12	ug/L	3.8
sec-Butylbenzene	ND	12	ug/L	3.8
tert-Butylbenzene	ND	12	ug/L	2.5
Carbon disulfide	ND	12	ug/L	3.8
Chlorobenzene	ND	12	ug/L	3.8
Dibromochloromethane	ND	12	ug/L	3.8
Dichlorodifluoromethane	ND	12	ug/L	5.0
1,2-Dichloroethane	ND	6.2	ug/L	2.5
Bromodichloromethane	ND	12	ug/L	3.8
Chloroethane	ND	25	ug/L	3.8
Chloroform	5.1 J	12	ug/L	2.5
Chloromethane	ND	25	ug/L	3.8
2-Chlorotoluene	ND	12	ug/L	3.8
4-Chlorotoluene	ND	12	ug/L	3.8
1,2-Dibromo-3-chloro-propane	ND	25	ug/L	7.5
1,2-Dibromoethane	ND	12	ug/L	3.8
Iodomethane	ND	25	ug/L	12
1,2-Dichlorobenzene	ND	12	ug/L	2.5
1,3-Dichlorobenzene	ND	12	ug/L	2.5
1,4-Dichlorobenzene	ND	12	ug/L	3.8
1,1-Dichloroethane	ND	12	ug/L	2.5
cis-1,2-Dichloroethene	ND	12	ug/L	3.8
trans-1,2-Dichloroethene	ND	12	ug/L	2.5
Vinyl chloride	ND	6.2	ug/L	3.8
2,2-Dichloropropane	ND	12	ug/L	3.8
1,1-Dichloropropene	ND	12	ug/L	3.8
Ethylbenzene	ND	12	ug/L	2.5
Hexachlorobutadiene	ND	12	ug/L	3.8

(Continued on next page)

KENNEDY/JENKS CONSULTANTS

Client Sample ID: BL_2_050201_

GC/MS Volatiles

Lot-Sample #...: E1E020280-014 Work Order #...: ECPPG1AA Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
2-Hexanone	ND	62	ug/L	25
Isopropylbenzene	ND	12	ug/L	2.5
p-Isopropyltoluene	ND	12	ug/L	2.5
Methylene chloride	ND	12	ug/L	2.5
4-Methyl-2-pentanone	ND	62	ug/L	25
Methyl tert-butyl ether	ND	12	ug/L	6.2
n-Propylbenzene	ND	12	ug/L	5.0
Styrene	ND	12	ug/L	3.8
1,1,1,2-Tetrachloroethane	ND	12	ug/L	3.8
1,1,2,2-Tetrachloroethane	ND	12	ug/L	3.8
Tetrachloroethene	ND	12	ug/L	8.8
Toluene	ND	12	ug/L	3.8
1,2,3-Trichlorobenzene	ND	12	ug/L	5.0
1,2,4-Trichloro-benzene	ND	12	ug/L	3.8
1,1,1-Trichloroethane	ND	12	ug/L	2.5
1,1,2-Trichloroethane	ND	12	ug/L	3.8
Trichloroethene	1100	12	ug/L	3.8
Trichlorofluoromethane	ND	25	ug/L	2.5
1,2,3-Trichloropropane	ND	12	ug/L	3.8
1,1,2-Trichlorotrifluoro-ethane	ND	12	ug/L	2.5
1,2,4-Trimethylbenzene	ND	12	ug/L	2.5
1,3,5-Trimethylbenzene	ND	12	ug/L	2.5
Xylenes (total)	ND	12	ug/L	6.2
Acrolein	ND	250	ug/L	150
Acrylonitrile	ND	250	ug/L	120
Vinyl acetate	ND	62	ug/L	12
Tetrahydrofuran	ND	120	ug/L	25
2-Chloroethyl vinyl ether	ND	62	ug/L	25

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	93	(75 - 120)
1,2-Dichloroethane-d4	116	(65 - 130)
Toluene-d8	94	(80 - 130)

NOTE(S):

J Estimated result. Result is less than RL.

QC DATA ASSOCIATION SUMMARY

E1R020280

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
001	SOLID	SW846 8015B		1123197	1123066
	SOLID	SW846 8015B		1123398	1123202
002	SOLID	SW846 8082		1123195	1123129
003	SOLID	SW846 8015B		1123197	1123066
	SOLID	SW846 8015B		1123397	1121226
004	SOLID	SW846 8015B		1123197	1123066
	SOLID	SW846 8015B		1123398	1123202
	SOLID	SW846 7471A		1123280	1123128
	SOLID	SW846 8260B		1130350	1130155
	SOLID	SW846 6010B		1123277	1123126
005	SOLID	SW846 8015B		1123197	1123066
	SOLID	SW846 8015B		1123398	1123202
	SOLID	SW846 7471A		1123280	1123128
	SOLID	SW846 8260B		1130287	1130112
	SOLID	SW846 6010B		1123277	1123126
006	SOLID	SW846 8260B		1130287	1130112
007	SOLID	SW846 8260B		1128469	1128260
008	SOLID	SW846 8015B		1123197	1123066
	SOLID	SW846 8015B		1123397	1121226
009	SOLID	SW846 8015B		1123197	1123066
	SOLID	SW846 8015B		1123397	1121226
010	SOLID	SW846 8015B		1123197	1123066
	SOLID	SW846 8015B		1123397	1121226
011	SOLID	SW846 8015B		1123197	1123066
	SOLID	SW846 8015B		1123397	1121226
012	SOLID	SW846 8015B		1123197	1123066
	SOLID	SW846 8015B		1123397	1121226
013	SOLID	SW846 8015B		1123197	1123066
	SOLID	SW846 8015B		1123398	1123202

(Continued on next page)

QC DATA ASSOCIATION SUMMARY

E1E020280

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
014	WATER	SW846 8260B		1124415	1124160
015	SOLID	SW846 8015B		1123197	1123066
	SOLID	SW846 8015B		1123398	1123202
016	SOLID	SW846 8015B		1123197	1123066
	SOLID	SW846 8015B		1123398	1123202
017	SOLID	SW846 8015B		1123197	1123066
	SOLID	SW846 8015B		1123398	1123202

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: E1E020280 **Work Order #...:** ECWAG1AA **Matrix.....:** WATER
MB Lot-Sample #: E1E040000-415

Prep Date.....: 05/03/01 **Analysis Time..:** 20:59
Analysis Date..: 05/03/01 **Prep Batch #...:** 1124415 **Instrument ID..:** MSH
Dilution Factor: 1

Analyst ID.....: 015590

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	ND	10	ug/L	SW846 8260B
Benzene	ND	1.0	ug/L	SW846 8260B
Bromobenzene	ND	1.0	ug/L	SW846 8260B
Bromochloromethane	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
Bromomethane	ND	2.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	0.50	ug/L	SW846 8260B
2-Butanone	ND	5.0	ug/L	SW846 8260B
n-Butylbenzene	ND	1.0	ug/L	SW846 8260B
sec-Butylbenzene	ND	1.0	ug/L	SW846 8260B
tert-Butylbenzene	ND	1.0	ug/L	SW846 8260B
Carbon disulfide	ND	1.0	ug/L	SW846 8260B
Chlorobenzene	ND	1.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
Dichlorodifluoromethane	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	0.50	ug/L	SW846 8260B
Chloroethane	ND	2.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
Chloromethane	ND	2.0	ug/L	SW846 8260B
2-Chlorotoluene	ND	1.0	ug/L	SW846 8260B
4-Chlorotoluene	ND	1.0	ug/L	SW846 8260B
1,2-Dibromo-3-chloro-propane	ND	2.0	ug/L	SW846 8260B
1,2-Dibromoethane	ND	1.0	ug/L	SW846 8260B
Iodomethane	ND	2.0	ug/L	SW846 8260B
1,2-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,3-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,4-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
cis-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B
trans-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B
Vinyl chloride	ND	0.50	ug/L	SW846 8260B
2,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloropropene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
Hexachlorobutadiene	ND	1.0	ug/L	SW846 8260B
2-Hexanone	ND	5.0	ug/L	SW846 8260B
Isopropylbenzene	ND	1.0	ug/L	SW846 8260B
p-Isopropyltoluene	ND	1.0	ug/L	SW846 8260B

(Continued on next page)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: E1E020280 **Work Order #...:** ECWAG1AA **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Methylene chloride	ND	1.0	ug/L	SW846 8260B
4-Methyl-2-pentanone	ND	5.0	ug/L	SW846 8260B
Methyl tert-butyl ether	ND	1.0	ug/L	SW846 8260B
n-Propylbenzene	ND	1.0	ug/L	SW846 8260B
Styrene	ND	1.0	ug/L	SW846 8260B
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B
1,2,3-Trichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,2,4-Trichloro-benzene	ND	1.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
Trichlorofluoromethane	ND	2.0	ug/L	SW846 8260B
1,2,3-Trichloropropane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichlorotrifluoro-ethane	ND	1.0	ug/L	SW846 8260B
1,2,4-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B
1,3,5-Trimethylbenzene	ND	1.0	ug/L	SW846 8260B
Xylenes (total)	ND	1.0	ug/L	SW846 8260B
Acrolein	ND	20	ug/L	SW846 8260B
Acrylonitrile	ND	20	ug/L	SW846 8260B
Vinyl acetate	ND	5.0	ug/L	SW846 8260B
Tetrahydrofuran	ND	10	ug/L	SW846 8260B
2-Chloroethyl vinyl ether	ND	5.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	94	(75 - 120)
1,2-Dichloroethane-d4	115	(65 - 130)
Toluene-d8	94	(80 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: E1E020280 **Work Order #...:** ECWAG1AC **Matrix.....:** WATER
LCS Lot-Sample#: E1E040000-415
Prep Date.....: 05/04/01 **Analysis Date..:** 05/04/01
Prep Batch #...: 1124415 **Analysis Time..:** 21:28
Dilution Factor: 1 **Instrument ID..:** MSH
Analyst ID.....: 015590

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
Benzene	**10.0**	**9.98**	**ug/L**	**100**	**SW846 8260B**
1,1-Dichloroethene	**10.0**	**12.4**	**ug/L**	**124**	**SW846 8260B**
Chlorobenzene	**10.0**	**9.43**	**ug/L**	**94**	**SW846 8260B**
Toluene	**10.0**	**9.43**	**ug/L**	**94**	**SW846 8260B**
Trichloroethene	**10.0**	**10.7**	**ug/L**	**107**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	100	(75 - 120)
1,2-Dichloroethane-d4	117	(65 - 130)
Toluene-d8	98	(80 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: E1E020280 **Work Order #...:** ECWAG1AC **Matrix.....:** WATER
LCS Lot-Sample#: E1E040000-415
Prep Date.....: 05/04/01 **Analysis Date..:** 05/04/01
Prep Batch #...: 1124415 **Analysis Time..:** 21:28
Dilution Factor: 1 **Instrument ID..:** MSH
Analyst ID.....: 015590

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Benzene	**100**	**(75 - 120)**	**SW846 8260B**
1,1-Dichloroethene	**124**	**(70 - 130)**	**SW846 8260B**
Chlorobenzene	**94**	**(80 - 120)**	**SW846 8260B**
Toluene	**94**	**(80 - 120)**	**SW846 8260B**
Trichloroethene	**107**	**(75 - 130)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	100	(75 - 120)
1,2-Dichloroethane-d4	117	(65 - 130)
Toluene-d8	98	(80 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...:	E1E020280	**Work Order #...:**	ECM1G1AD-MS ECM1G1AE-MSD	**Matrix.....:**	WATER
MS Lot-Sample #:	E1E010253-001				
Date Sampled...:	04/30/01 17:00	**Date Received..:**	05/01/01 20:00	**MS Run #.....:**	1124160
Prep Date.....:	05/04/01	**Analysis Date..:**	05/04/01		
Prep Batch #...:	1124415	**Analysis Time..:**	06:07		
Dilution Factor:	1	**Analyst ID.....:**	015590	**Instrument ID..:**	MSH

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Benzene	**ND**	**10.0**	**9.57**	**ug/L**	**96**		**SW846 8260B**
	ND	**10.0**	**9.73**	**ug/L**	**97**	**1.6**	**SW846 8260B**
1,1-Dichloroethene	**ND**	**10.0**	**12.4**	**ug/L**	**124**		**SW846 8260B**
	ND	**10.0**	**12.5**	**ug/L**	**125**	**0.80**	**SW846 8260B**
Chlorobenzene	**ND**	**10.0**	**9.29**	**ug/L**	**93**		**SW846 8260B**
	ND	**10.0**	**9.35**	**ug/L**	**94**	**0.64**	**SW846 8260B**
Toluene	**ND**	**10.0**	**8.99**	**ug/L**	**90**		**SW846 8260B**
	ND	**10.0**	**9.20**	**ug/L**	**92**	**2.3**	**SW846 8260B**
Trichloroethene	**ND**	**10.0**	**10.5**	**ug/L**	**105**		**SW846 8260B**
	ND	**10.0**	**10.7**	**ug/L**	**107**	**1.6**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	102	(75 - 120)
	99	(75 - 120)
1,2-Dichloroethane-d4	128	(65 - 130)
	122	(65 - 130)
Toluene-d8	100	(80 - 130)
	96	(80 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

[redacted]

Chain of Custody Record

SEVERN TRENT SERVICES — **Severn Trent Laboratories, Inc.**

STL-4124 (0700)

Client	Project Manager	Date	Chain of Custody Number
Kennedy / Jenks	Rus Purcell	5-2-01	051855
Address	Telephone Number (Area Code)/Fax Number	Lab Number	Page 2 of 2
2151 Michelson Dr. Suite 100	949-261-1577		
City / State / Zip Code	Site Contact	Lab Contact	
Irvine CA. 92612	Shane Scrimshire		
Project Name and Location (State)	Carrier/Waybill Number		
Boeing Purcell C			
Contract/Purchase Order/Quote No.			
00434.00			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Analysis: 8015m	8260	7199	Special Instructions/ Conditions of Receipt
Build-1-M-12-050201-5	5/2/01	1150				X	X						X			24hr. turn
BL-2-050201-		0730		X						X				X	X	
Build-1-M-10-050201-3		1355				X	X						X			24hr. turn
Build-1-M-10-050201-4		1405				X	X						X			
Build-1-M-10-050201-5		1410				X	X						X			

000003

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 3 months)

Turn Around Time Required: 5 day turn
☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other _____

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By	5-2-01	1413	1. Received By	5-2-01	1413
2. Relinquished By	5-2-01	1533	2. Received By	05/02/01	1535
3. Relinquished By			3. Received By		

Comments

Del Mar Analytical

2852 Alton Ave., Irvine, CA 92606 (949) 261-1022 FAX (949) 261-1228
1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (909) 370-1046
7277 Hayvenhurst, Suite B-12, Van Nuys, CA 91406 (818) 779-1844 FAX (818) 779-1843
9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-9596 FAX (858) 505-9689
9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851

LABORATORY REPORT

Prepared For: STL Los Angeles
1721 S. Grand Avenue
Santa Ana, CA 92705

Attention: Diane Suzuki
Project: E1E020280

Sampled: 05/02/01
Received: 05/02/01
Reported: 05/10/01

This laboratory report is confidential and is intended for the sole use of Del Mar Analytical and its client. This entire report was reviewed and approved for release.

CA ELAP Certificate #1197
AZ DHS License #AZ0428

Del Mar Analytical, Irvine
Pat Abe
Project Manager

Del Mar Analytical

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STL Los Angeles
1721 S. Grand Avenue
Santa Ana, CA 92705
Attention: Diane Suzuki

Project ID: E1E020280

Report Number: IKE0058

Sampled: 05/02/01
Received: 05/02/01

INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
			mg/l	mg/l	mg/l				
Sample ID: IKE0058-01 (E1E020280-014 - Water)									
Chromium VI	EPA 7199	I1E0238	0.00020	0.0020	**0.016**	1	05/02/01	05/02/01	P2

Del Mar Analytical, Irvine
Pat Abe
Project Manager

Del Mar Analytical

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9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851

STL Los Angeles
1721 S. Grand Avenue
Santa Ana, CA 92705
Attention: Diane Suzuki

Project ID: E1E020280
Report Number: IKE0058

Sampled: 05/02/01
Received: 05/02/01

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: I1E0238 Extracted: 05/02/01											
Blank Analyzed: 05/02/01 (I1E0238-BLK1)											
Chromium VI	ND	0.0020	0.00020	mg/l							
LCS Analyzed: 05/02/01 (I1E0238-BS1)											
Chromium VI	0.00368	0.0020	0.00020	mg/l	0.00400		92.0	90-110			
Matrix Spike Analyzed: 05/02/01 (I1E0238-MS1)						**Source: IKE0058-01**					
Chromium VI	0.0202	0.0020	0.00020	mg/l	0.00400	0.016	105	70-130			*P2*
Matrix Spike Dup Analyzed: 05/02/01 (I1E0238-MSD1)						**Source: IKE0058-01**					
Chromium VI	0.0203	0.0020	0.00020	mg/l	0.00400	0.016	107	70-130	0.494	15	*P2*

Del Mar Analytical, Irvine
Pat Abe
Project Manager

Del Mar Analytical

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9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-9596 FAX (858) 505-9689
9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851

STL Los Angeles
1721 S. Grand Avenue
Santa Ana, CA 92705
Attention: Diane Suzuki

Project ID: E1E020280

Report Number: IKE0058

Sampled: 05/02/01
Received: 05/02/01

DATA QUALIFIERS AND DEFINITIONS

P2	Sample received without chemical preservation, but preserved by the laboratory.
ND	Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
NR	Not reported.
RPD	Relative Percent Difference

Del Mar Analytical, Irvine
Pat Abe
Project Manager

Severn Trent Laboratories, Inc
SAMPLE ANALYSIS REQUISITION

LABORATORY: DEL MAR ANALYTICAL
2852 ALTON AVE.
IRVINE CA 92606,BUI A

NEED ANALYTICAL REPORT BY
5/07/01

ATTN:

LAB PURCHASE ORDER: SR030669

CLIENT CODE: 366740 PROJECT MANAGER: Diane Suzuki

NUMBER OF SAMPLES IN LOT: 0000

SAMPLE I.D.	SAMPLING DATE	ANALYSIS REQUIRED
E1E020280-014	5/02/01	Archive
ECPPG-1-AC		(ARCHIVE) METHOD: NONE

Br+6 by 7199

NEED DETECTION LIMIT AND ANALYSIS DATE INCLUDED IN REPORT.

SHIPPING METHOD: DROP OFF DATE: 5/02/01

SEND REPORT TO: DROP OFF

SAMPLE RECEIVED BY: _____ DATE: _____

PLEASE SEND A SIGNED COPY OF THIS FORM WITH REPORT AT COMPLETION OF ANALYSIS.

THANK YOU.

STL Los Angeles
INT: _____ 5/02/01 17:19:56
DEL MAR ANALYTICAL
2852 ALTON AVE.
IRVINE CA 92606,BUI A

RELINQUISHED BY: SAMPLE CONTROL DATE/TIME: 5/02/01 16:40

RELINQUISHED BY: _____ DATE/TIME: 5-2-01 1700

RECEIVED FOR LAB BY: _____ DATE/TIME: 5/2/01 1700

3° intact

PLEASE RETURN ORIGINAL SAMPLE ANALYSIS REQUISITION

ATTACHMENT D
NORCAL COMPACTION REPORT

NORCAL ENGINEERING
SOILS AND GEOTECHNICAL CONSULTANTS

10641 HUMBOLT STREET
LOS ALAMITOS, CALIFORNIA 90720
PHONE 562.799.9469 • FAX 562.799.9459

Field Observation Memo

Project Infinity Media, Inc. (CEG) Date 6-11-2001

Address 19481 Harbogate Way Project Number 5673-00

Los Angeles, Calif (Lot 7, Tract 59173)

Observation and testing of backfill operations for an excavation from abandoned monitor well located under proposed foundation at the north-west corner of proposed building. All the backfill was done under the observation and approval of this firm. The maximum depth of fill placed was 8 feet. All compaction tests taken results above 90% of the laboratory standard and is suitable for its intended use.

C.E.G.

Accepted by

Javier Sanchez
NorCal Representative